

**VACUUM CHAMBER HAVING INSTRUMENT-MOUNTING BULKHEAD
EXHIBITING REDUCED DEFORMATION IN RESPONSE TO PRESSURE
DIFFERENTIAL, AND ENERGY-BEAM SYSTEMS COMPRISING SAME**

Abstract of the Disclosure

5 Reduced-pressure ("vacuum") chambers, and microlithographic exposure
systems including one or more of such chambers, are disclosed. The vacuum
chamber exhibits reduced deformation of a bulkhead of the chamber during
evacuation of the chamber during a change in pressure differential across the
bulkhead. A secondary wall is situated relative to the bulkhead outside the chamber
10 and at a gap distance from the bulkhead, so as to form a secondary reduced-pressure
chamber in the gap. The secondary reduced-pressure chamber is isolated from the
pressure outside the chamber and from the subatmospheric pressure inside the
chamber. The differential between the pressure outside the chamber and the
pressure inside the secondary reduced-pressure chamber is exerted on the secondary
15 wall, but has substantially no effect on the bulkhead, thereby reducing deformation
of the bulkhead. Reducing bulkhead deformation prevents degradations of
performance accuracy, otherwise caused by pressure-change-induced deformation of
the bulkhead, of any instruments mounted to the bulkhead.